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EXAMINER

LUONG, VINH

ART UNIT PAPER NUMBER

3682

DATE MAILED: 09/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/771,522

Applicant(s)

OGAWA ET AL.

Examiner

Vinh T. Luong

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 05 July 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) 5-18 and 26-28 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 20 is/are allowed.
- 6) ☒ Claim(s) 1,2,4,19 and 21-25 is/are rejected.
- 7) ☒ Claim(s) 3 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 July 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☒ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

  
Vinh T. Luong  
Primary Examiner

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 9/7/05.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☒ Other: Attachment.

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1. The Amendment filed on July 5, 2005 has been entered.
2. Applicant's election of Group I in the reply filed on February 7, 2005 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse. MPEP § 818.03(a).
3. Claims 9-18 and 26-28 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on February 7, 2005.
4. Applicant's election of species of Figs. 20-23 in the reply filed on February 7, 2005 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse. MPEP § 818.03(a).
5. Claims 5-8 and 13-18 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on February 7, 2005.
6. The drawings were received on July 5, 2005. These drawings are accepted by the Examiner as a matter of form set forth in 37 CFR 1.84(h)(3).
7. The drawings are objected to because:
  - (a) The drawings are inconsistent with the specification or *vice versa*. For example, Table 2 and its descriptions in the specification describe portions P and Q, however, the drawings do not show the referential character Q. See 37 CFR 1.84(p)(5); and

(b) Each part of the invention, such as, the lowest fatigue strength portion and the variable fatigue strength portion in claim 19 should be designated by a referential numeral or character.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

8. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the claimed features, such as, (a) the lowest fatigue strength portion *in at least one of the big and small ends 20 and 60*; and (b) the variable fatigue strength portion *in each of the first and second joining sections 30 and 50 and in the connecting beam section 40* in claim 19 must be shown or the features canceled from the claim(s). *No new matter should be entered.*

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9. The disclosure is objected to because of the following informalities: the specification is inconsistent with the drawings or *vice versa*. For example, Table 2 and its descriptions in the specification describe portions P and Q, however, the drawings do not show the referential character Q. Appropriate correction is required.

10. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

11. Claims 19 and 21-25 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The "wherein" clause of claim 19 recites:

wherein *a lowest fatigue strength portion* which is the lowest in fatigue strength exists *in at least one of the big and small ends*, and *a variable fatigue strength portion* which varies in fatigue strength exists *in each of the first and second joining sections and in the connecting beam section*;

wherein a product of the cross sectional area and the fatigue strength at a cross section of each of the joining and connecting beam section is equal to or greater than a product of the cross sectional area and the fatigue strength in the smallest cross sectional area portion in the connecting beam section. (Emphasis added).

However, the drawings do not show the claimed features, such as, (a) the lowest fatigue strength portion in *at least one of the big and small ends 20 and 60*; and (b) the variable fatigue strength portion in *each of the first and second joining sections 30 and 50 and in the connecting beam section 40*. In fact, *e.g.*, Figs. 1 and 2 do not show the lowest fatigue strength portion P in

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the ends 20 and 60. All of the portions at the planes  $P_1$  to  $P_6$  are at the joining sections 30, 40, and 50, *not* at the big and small ends 20 and 60. Moreover, the drawings do not show any variable fatigue strength portion Q as admitted by the Applicant in the Drawing Objection on page 10 of the Amendment filed on July 5, 2005.

It is unclear as to how Applicant makes: (a) the claimed lowest fatigue strength portion in at least one of the big and small ends 20 and 60; and (b) the claimed variable fatigue strength portion in the sections 30, 40, and 50. In other words, claim 19 contains subject matter (*i.e.*, lowest fatigue strength portion and variable fatigue strength portion) which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the Applicants, at the time the application was filed, had possession of the claimed invention.

12. Claims 19 and 21-25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is unclear which portions of the connecting rod are the lowest fatigue strength portion and the variable fatigue strength portion claimed in claim 19. Applicant is respectfully urged to identify each claimed element with reference to the drawings.

The recitation “wherein *a lowest fatigue strength portion* which is the lowest in fatigue strength exists *in at least one of the big and small ends*, and *a variable fatigue strength portion* which varies in fatigue strength exists *in each of the first and second joining sections and in the connecting beam section*” in claim 19 is not understood since the drawings, such as, Figs. 1, 2, 11, 20, and 21 do not show the instant claimed features.

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13. Claims 1, 2, and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by Japanese Utility Model No. 10-306317 (hereinafter JP'317).

Regarding claim 1, JP'317 teaches a connecting rod comprising:

- a connecting beam section (at 14b in Fig. 11(D). See Attachment) serving as a main body of the connecting rod;

- a big end 12a, 13a, 14a located at a first end side of the connecting beam section;

- a small end 12c, 13c, 14c located at a second end side of the connecting beam section, the second end side being axially opposite to the first end side;

- a first joining section (Att.) located between the connecting beam section (Att.) and the big end 12a, 13a, 14a to connect the connecting beam section (Att.) and the big end 12a, 13a, 14a; and

- a second joining section (Att.) located between the connecting beam section (Att.) and the small end 12c, 13c, 14c to connect the connecting beam section (Att.) and the small end 12c, 13c, 14c;

wherein each of the first and second joining sections (Att.) gradually and continuously decreases in cross sectional area toward the connecting beam section (Fig. 12) and has a strength distribution in which a strength increases with a decrease in the cross sectional area.

Applicant's claim 1 and other claims below are anticipated by JP'317 because JP'317 teaches each and every positively claimed element of the claim. See Derwent English Abstract attached. On the other hand, note that the "wherein" or "whereby" clause that merely expresses an inherent result, adds nothing to claim's patentability. See *Texas Instruments, Inc. v.*

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*International Trade Commission*, 26 U.S.P.Q.2d 1018 (CAFC 1993) and *Griffin v. Bertina*, 62 USPQ2d 1431, 1434 (Fed. Cir. 2002).

Regarding claim 2, the strength distribution is based on a proportion (%) of martensite. See Derwent English Abstract attached.

Regarding claim 4, the strength distribution is inherently formed based on a distribution in at least one of a hardening temperature and a tempering time for each of the first and second joining sections. See Derwent English Abstract attached.

14. Claim 1 is further rejected under 35 U.S.C. 102(b) as being clearly anticipated by Mrdjenovich et al. (US Patent No. 5,048,368).

See cross sections shown in Figs. 7 and 6 that gradually and continuously decrease in cross sectional area toward the connecting beam section 11 as seen in Figs. 2 and 3.

15. Claim 1 is further rejected under 35 U.S.C. 102(b) as being clearly anticipated by Haman (US Patent No. 5,737,976).

See cross sections 103 and 105 shown in Fig. 2 that gradually and continuously decrease in cross sectional area 101 toward the connecting beam section 101.

16. Claim 3 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

17. Claim 20 is allowed.

18. As allowable subject matter has been indicated, applicant's reply must either comply with all formal requirements or specifically traverse each requirement not complied with. See 37 CFR 1.111(b) and MPEP § 707.07(a).

19. Applicant's arguments filed July 5, 2005 have been fully considered but they are not persuasive.

### Drawing Objections

On pages 10 and 11 of the specification, Applicant contends:

The drawings are also objected to as allegedly being inconsistent with the specification in view of the recitation of "Q" in the specification. Applicants traverse this objection. "*Q*" is *not tied to any particular figure or location within the figures*. The location of "P" and "Q" may vary according to the cross-sectional shape of connecting rod, and therefore *it is not necessary to show the referential character Q in the drawings*. Indeed, the use of variables "P" and "Q" is merely shorthand to convey information about examples of rods according to the invention, the information about these examples being detailed in the tables of the application. *The specification makes this clear at page 31, by explaining that for the examples presented in the tables, structures "were observed at two portions, portion P of the smallest cross sectional area in connecting beam section B and portion Q having a cross sectional area 1.5 times larger than that of portion P of the smallest cross sectional area."* It is thus submitted that 37 CFR 1.83 does not require the showing of "Q" in the figures. (Emphasis added).

First, as seen in the above quotation, Applicant admitted that the portion Q has a cross sectional area 1.5 times larger than that of portion P of the smallest cross sectional area. Therefore, *Q is tied to a particular figure or location within the figures*. The location of "Q" is the location wherein Q has a cross sectional area 1.5 times larger than that of portion P of the smallest cross sectional area. If the Applicant can show the portion P, by inference, Applicant can also show the portion Q.

Second, it is necessary to show the referential character Q in the drawings as required under 37 CFR 1.84(p)(5) quoted below:

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“Reference characters not mentioned in the description *shall not* appear in the drawings. *Reference characters mentioned in the description must appear in the drawings.*” (Emphasis added).

Moreover, 37 CFR 1.83(a) states:

**37 CFR § 1.83 Content of drawing.**

(a) The drawing in a nonprovisional application *must* show every feature of the invention specified in the claims. However, conventional features disclosed in the description and claims, where their detailed illustration is not essential for a proper understanding of the invention, should be illustrated in the drawing in the form of a graphical drawing symbol or a labeled representation (*e.g.*, a labeled rectangular box).

Thus, Applicant is also required to show the claimed features recited in amended claim

19. The drawing objections are maintained for the reasons set forth above.

**Specification Objection**

The specification and the drawings are inconsistent with each other because reference character “Q” mentioned in the description does not appear in the drawings. 37 CFR 1.84(p)(5) *supra*. Thus, the objection is maintained.

**35 USC 112, First Paragraph**

The specification and the drawings do not disclose, *inter alia*, how to make/use: (a) the lowest fatigue strength portion *in at least one of the big and small ends 20 and 60*; and (b) the variable fatigue strength portion *in each of the first and second joining sections 30 and 50 and in the connecting beam section 40*. Therefore, the instant ground of rejection is maintained.

**35 USC 112, Second Paragraph**

As seen above, amended claim 19 is indefinite or not understood. Therefore, the instant ground of rejection is maintained.

35 USC 102

At the outset, Applicant contends that the language after the “wherein” clause of claim 1 was not treated as a claim “*recitation*.”

The Examiner respectfully submits that since the “wherein” clause is recited in claim 1, thus, it is a claim “*recitation*” as a matter of course.

Applicant further argues that *Texas Instruments* dealt with the clause “whereby,” not “wherein.”

Although Applicant’s semantic arguments are apparently correct, however, it is well settled that the “whereby” or “wherein” clause that merely states the result of the limitations in the claim adds nothing to the patentability or substance of the claim. See the Court’s treatment of the “wherein” clause in *Griffin v. Bertina, supra*.

Returning to the case at hand, the “wherein” clause in claim 1 merely states the result of the limitations in the claim as explained below.

Claim 1 recites “wherein each of the first and second joining sections (Att.) gradually and continuously decreases in cross sectional area toward the connecting beam section (Fig. 12) and *has a strength distribution in which a strength increases with a decrease in the cross sectional area.*” (Emphasis added).

On the other hand, the standard text book of material science teaches that the strength of material improves by the hardening, heat-treatment, and cold forging process, *etc.* See page 17-1 through page 17-31 of *Mechanical Design and Systems Handbook* attached. Applicant uses the methods such as hardening, heat-treatment, and cold forging process, *etc.* Therefore, the strength distribution of Applicant’s connecting rod must be improved particularly in the areas where the

cross sectional is decreased to prolong life of the connecting rod as taught by standard text books of mechanical design.

With respect to claim 1, Applicant admitted that “[t]rue, JP’317, Mrdjenovich, and Haman do teach connecting rods.” However, Applicant asserts that: “[s]till, assuming *arguendo* that at least Mrdjenovich and Haman teach joining sections that are gradually and continuously decreased in cross sectional area towards a connecting beam, these references still do not teach the feature of claim 1 that each of the joining sections has a strength distribution in which a strength increases with a decrease in the cross sectional area. Thus, claim 1 is not anticipated by any of these references.”

Contrary to Applicant’s assertion, the connecting rods of JP’317, Mrdjenovich, and Haman have joining sections that are gradually and continuously decreased in cross sectional area towards a connecting beam. Thus, the connecting rods of JP’317, Mrdjenovich, and Haman are expected to behave in the same manner as Applicant's connecting rod because they all have the same sectional profiles. The necessary inherence of the connecting rods of JP’317, Mrdjenovich, and Haman is flown naturally from the teaching of JP’317, Mrdjenovich, and Haman of the same type of Applicant's cross sectional profiles. *In re Best*, 195 USPQ 430, 433 (CCPA 1977) and M.P.E.P. 2112.

As to claim 2, Applicant argues that “while it is true that JP '317 does refer to quenching to promote martensitic transformation, there is no teaching in JP '317 that a strength distribution is based on a proportion (%) of martensite. Thus, claim 2 is allowable for yet another reason.”

However, it is well settled that the 102b reference does not need to provide such explanation to anticipate when an artisan in the art would know as evidenced by standard text

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book. *In re Opprecht*, 12 USPQ2d 1235 (CAFC 1989). In this case, JP'317 teaches the martensitic transformation. Moreover, standard text books of material science, such as, pages 17-1 - 17-31 of *Mechanical Design and Systems Handbook* attached, clearly teach that the strength distribution is based on a proportion (%) of martensite. Therefore, claim 2 is anticipated by JP'317 even though JP'317 does not explicitly so describes.

Similarly, as to claim 4, Applicant argues that the Derwent English Abstract of JP'317 does not demonstrate that the strength distribution is *inherently* formed based on a distribution in at least one of a hardening temperature and a tempering time for the joining sections. The Examiner respectfully submits that standard text books of material science, such as, pages 17-1 - 17-31 of *Mechanical Design and Systems Handbook* attached, clearly teach that the strength distribution is *inherently or must be* based on a distribution in at least one of a hardening temperature and a tempering time for the joining sections. Therefore, claim 4 is anticipated by JP'317 even though JP'317 does not explicitly so describes.

Finally, Applicant asserts that the claimed connecting rod is relatively easily machined and has a high buckling strength in comparison to a conventional connecting rod. It is well settled that an expert's opinion on the ultimate legal issue must be supported by some thing more than a conclusory statement. *In re Buchner*, 18 USPQ2d 1331, 1332 (Fed. Cir. 1991). Applicant has not provided any secondary evidence to support Applicant's assertion. Therefore, the rejection based on the art is maintained.

#### **Claims 19 and 21-25**

Applicant reminds the Examiner that: "MPEP § 2143.03 states that if 'a claim is subject to more than one interpretation, at least one of which would render the claim unpatentable over

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the prior art, the examiner should reject the claim as indefinite . . . and *should* reject the claim over the prior art based on the interpretation of the claim that renders the prior art applicable." (MPEP § 2143.03, second paragraph.)"

On the one hand, the language "should" in MPEP denotes an advisory, not a mandatory requirement. On the other hand, as noted in MPEP 2111, during patent examination, *claims are given their broadest reasonable interpretation consistent with the specification*. See *In re Paulsen*, 30 F.3d 1475, 1480, 31 USPQ2d 1671, 1674 (Fed. Cir. 1994); and *Intervet America Inc. v. Kee-Vet Lab. Inc.*, 887 F.2d 1050, 1053, 12 USPQ2d 1474, 1476 (Fed. Cir. 1989); and *Philips v. AWH Corp.*, 75 USPQ2d 1321 (Fed. Cir. 2005). In this case, the Examiner cannot interpret claims 19 and 21-25 in consistent with the specification. In fact, these claims are in direct conflict with substantial evidence presented in Applicant's drawings. Therefore, the Examiner respectfully declines to make the rejection based on the art when the scope of Applicant's claims are unascertainable to a reasonable degree.

#### **Request for Rejoinder of Withdrawn Claims**

The case is not in the condition for allowance, therefore, Applicant's request is respectfully denied.

**20. THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

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will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vinh T. Luong whose telephone number is 571-272-7109. The examiner can normally be reached on Monday - Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Marmor can be reached on 571-272-7095. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Luong

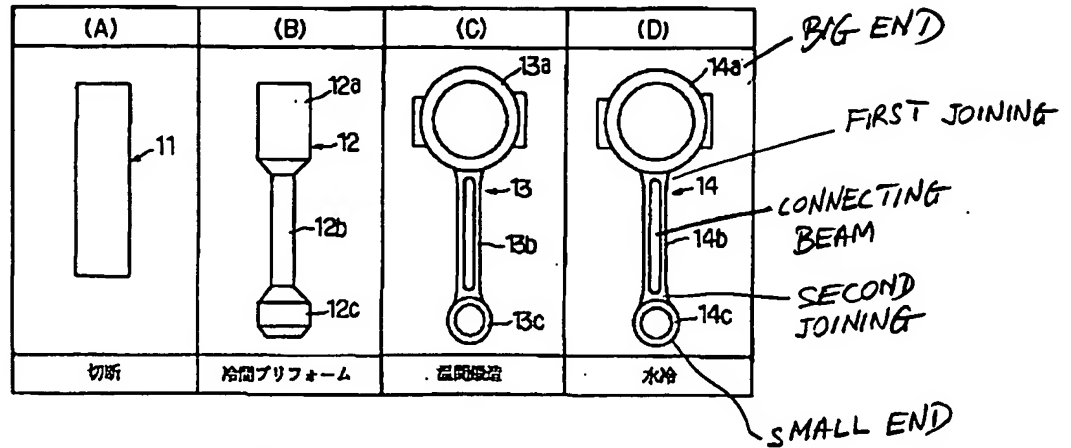
September 19, 2005



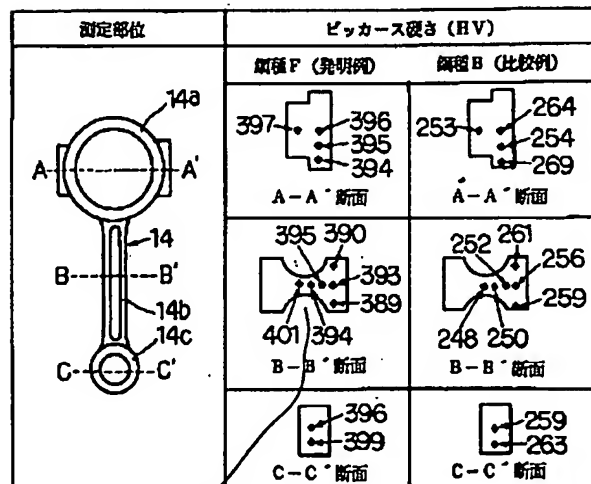
Vinh T. Luong  
Primary Examiner

# **ATTACHMENT**

【図11】



【図12】



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